CFSO
Consortium of Forensic Science Organizations

American Academy of Forensic Sciences
American Society of Crime Laboratory Directors
International Association for Identification
National Association of Medical Examiners
Society of Forensic Toxicologists/ American Board of Forensic Toxicology

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OPIOID AND EMERGING DRUG ISSUES IN TOXICOLOGY LABORATORIES

REQUEST

Enhanced and continued federal funding for new instrumentation, data management systems, analytical method development and validation, and training of personnel. These funds will facilitate a proactive agenda for the development and validation of scientific methodologies for these emerging synthetic drugs, otherwise known as novel psychoactive substances (NPS) and to better respond to the ever-increasing workload in forensic toxicology laboratories. This funding would also allow forensic toxicology laboratories to advise policy and law makers as they evaluate, codify and make permanent the scheduling of opioids such as fentanyl analogs and evaluate emerging drugs for scheduling by federal and state entities.

BACKGROUND

The number of drug overdose deaths has risen significantly since 2014 due to the widespread emergence of NPS in the US. Deaths are often attributed to the ingestion of illicitly manufactured fentanyl and its analogs, as well as other novel and emerging drugs including designer benzodiazepines, opioids, and stimulants. The increase in decedents is presenting significant challenges to Medical Examiners and Coroners (ME/C).

Forensic toxicology laboratories are overwhelmed by the increase in caseload and often cannot provide the required expanded scope of analysis for NPS in a timely fashion. This is due in part to the lack of appropriate instrumentation to perform these critical analyses and insufficient staffing of qualified practitioners to perform complex analyses. In addition, many laboratories are unable to obtain state-of-the-art instrumentation and struggle to meet demanding turn-around-times and expanded scope of analyses. Also, methods for identifying and quantifying NPS require extensive validation as mandated by new national standards for the performance of analyses and laboratory accreditation. In many instances, validation can take weeks or months to accomplish. Implementing new instrumentation in an accredited laboratory environment is not a "plug-and-play" exercise and requires personnel with expertise in analytical toxicology.

The analysis of drugs in the forensic toxicology laboratory involves many steps, including a screen and confirmation, followed by quantitative analysis, when applicable. The inclusion of emergent drugs in these well-established methods is time-consuming and costly. In addition, existing staff may not have training on the most current instrumentation to do this analysis. Further, the high-tech instrument systems used in forensic toxicology labs are complex and require extensive validation prior to implementation. For interpretation purposes, testing is evolving from a strictly qualitative (presence/absence of a substance) approach to a more quantitative approach (concentration of a substance) in order to obtain definitive data regarding NPS and their role in the cause of death. Quantitative testing is more difficult to achieve, is costly, and requires extensive validation to meet national standards.

Toxicological testing provides critical support to the ME/C community in death investigations and the certification of the cause and manner of death. The enhanced scope of testing by the forensic toxicology laboratory will facilitate the accurate certification of deaths from these novel drugs. Further, the recent integration of electronic data sharing between laboratories and ME/C offices they serve is critical to ensure the timely transfer of information needed to support the cause and manner of death certification. Currently, forty percent (40%) of ME/C offices do not have a computerized data management system much less the ability to share data electronically with other ME/C offices or toxicology laboratories. Communication between toxicology laboratories and the ME/C is essential to prompt the investigation of emerging drugs as an integral part of potential overdose or drug related deaths inquiry. Data sharing between ME/C and other stakeholders is the focus of the critically important federal MDI-DATA-Working Group and more funding must be directed to this essential function.

These challenges also impact our public health partners lack of comprehensive toxicology data constrains policy makers' ability to understand current drug trends in their communities and their ability to form timely and appropriate policies and action strategies to save lives. Public safety measures, including education, treatment, interdiction, recovery, and even counter action drugs cannot be effective without expanded toxicology analysis for early detection of these new drugs.

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